

10/519, 208

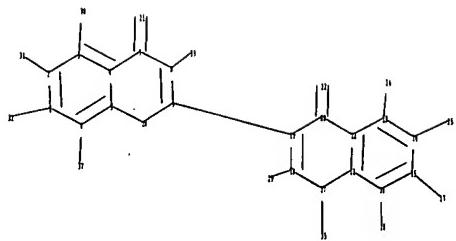
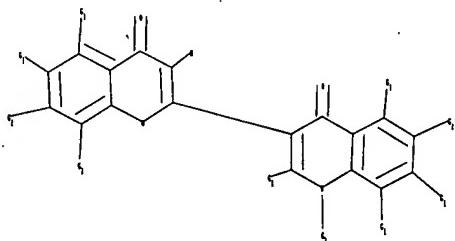
## Connecting via Winsock to STN

Welcome to STN International! Enter x:x

FILE 'HOME' ENTERED AT 11:07:07 ON 11 JUN 2007

=> file req

```
=>  
Uploading C:\Program Files\Stnexp\Queries\10519208.str
```



chain nodes :

21 22 24 25 27 28 29 30 31 32 35 37 39

ring nodes :

1 2 3 4

### chain bonds

CHART SERIES

20-22

20-22

Page 1

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ring bonds :  
1-2 1-6 2-3 3-4 4-5 4-7 5-6 5-10 7-8 8-9 9-10 11-12 11-16 11-17 12-13  
12-20 13-14 14-15 15-16 17-18 18-19 19-20  
exact/norm bonds :  
1-32 2-31 3-30 6-37 7-21 11-17 12-20 13-24 14-25 15-27 16-28 17-18  
17-35 18-19 18-29 19-20 20-22  
exact bonds :  
4-7 5-10 7-8 8-9 8-39 9-10 9-19  
normalized bonds :  
1-2 1-6 2-3 3-4 4-5 5-6 11-12 11-16 12-13 13-14 14-15 15-16  
isolated ring systems :  
containing 1 : 11 :

G1:C,H,O

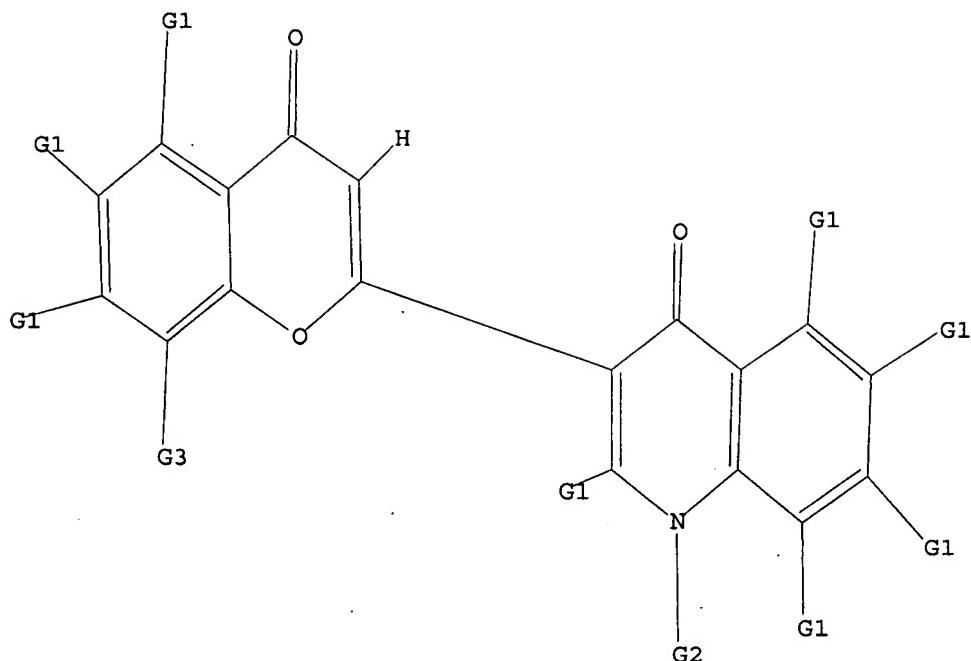
G2:H,Cb,Cy,Hy

G3:C,H,O,Cb,Cy,Hy

Match level :  
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom  
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom  
20:Atom 21:CLASS 22:CLASS 24:CLASS 25:CLASS 27:CLASS 28:CLASS 29:CLASS  
30:CLASS 31:CLASS 32:CLASS 35:CLASS 37:CLASS 39:CLASS

L1 STRUCTURE UPLOADED

=> d 11  
L1 HAS NO ANSWERS  
L1 STR



G1 C, H, O

G2 H, Cb, Cy, Hy

G3 C, H, O, Cb, Cy, Hy

Structure attributes must be viewed using STN Express query preparation.

=> s l1 full

L3 21 SEA SSS FUL L1

=> file ca

=> s l3

L4 1 L3

=> d ibib abs fhitstr

L4 ANSWER 1 OF 1 CA COPYRIGHT 2007 ACS ON STN  
 ACCESSION NUMBER: 140:59525 CA  
 TITLE: Preparation of  
 3-(4-oxo-4H-chromen-2-yl)-(1H)-quinolin-4-ones as anticancer agents  
 INVENTOR(S): Brion, Jean Daniel; Israel, Lucien; Le Rident, Alain;  
 Harpey, Catherine; Rabhi, Cherif; El Kaloun, Bachir  
 PATENT ASSIGNEE(S): Les Laboratoires Servier, Fr.; Servier Lab  
 SOURCE: Fr. Demande, 36 pp.  
 CODEN: FRXXBL  
 DOCUMENT TYPE: Patent  
 LANGUAGE: French  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2841243	A1	20031226	FR 2002-7536	20020619
FR 2841243	B1	20040820		
CA 2489136	A1	20031231	CA 2003-7580136	20030618
WO 2004000834	A1	20031231	WO 2003-FR1849	20030618
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: GH, GM, KE, LS, MM, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IS, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BP, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003269003	A1	20040106	AU 2003-269003	20030618
EP 1513833	A1	20050316	EP 2003-750780	20030618
EP 1513833	B1	20060419		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, PI, RO, MK, CY, AL, TR, BG, CZ, BE, HU, SK				
BR 2003011956	A	20050329	BR 2003-11956	20030618
CN 1692110	A	20051102	CN 2003-814050	20030618
JP 2005533077	T	20051104	JP 2004-514935	20030618
AT 323698	T	20060515	AT 2003-750780	20030618
PT 1513833	T	20060731	PT 2003-750780	20030618
ES 2262013	T3	20061201	ES 2003-3260780	20030618
NO 2004005540	A	20041217	NO 2004-5540-	20041217
US 2006063801	A1	20060323	US 2004-519208	20041217
			PR 2002-7536	A 20020619
				WO 2003-FR1849 W 20030618

OTHER SOURCE(S): MARPAT 140:59525  
 GI

L4 ANSWER 1 OF 1 CA COPYRIGHT 2007 ACS ON STN (Continued)  
 AB Title compds. I [wherein R1, R2, R3, R4, R6, R8, R9, R10 = H, OH, alkyl, aryl/alkoxycarbonyl/alkoxy, aryloalkoxy, and alkoxy carbonyl/alkoxy; R5 = alkyl, (un)substituted heteroaryl; R7 = H, OH, alkoxy, cycloalkyl, or

R7 - (un)substituted nitrogen or oxygen heterocycle, their optical isomers, pharmaceutical acceptable salts with acids, hydrates and solvates] were prepared as anticancer agents. For example, II was prepared by esterification of 2,4-dimethoxy-6-hydroxyacetophenone (preparation given) with

2-acetyl-5-methoxyphenyl-4-oxo-1-phenyl-1,4-dihydroquinoline-3-carboxylate (preparation given), rearrangement in the presence of BuOK/DMP/THP, cyclization

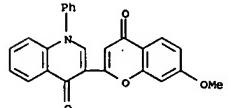
in the presence of AcOH/H<sub>2</sub>SO<sub>4</sub>, and deprotection. In an *in vitro* cytotoxicity test, II showed an IC<sub>50</sub> ranging from 0.25 μM to 0.05 μM towards five tumor cell lines. I exhibited synergistic effect with several well-known anticancer agents (no data). Selected I induced apoptosis in 8 h.

IT 637362-92-6P, 3-(7-Methoxy-4-oxo-4H-1-benzopyran-2-yl)-1-phenyl-1,4-dihydroquinolin-4-one

RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); US89 (Uses) (anticancer agent; preparation of oxochromenylquinolinones as anticancer agents)

RN 637362-92-6 CA

CN 4(1H)-Quinolinone, 3-(7-methoxy-4-oxo-4H-1-benzopyran-2-yl)-1-phenyl- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

*This case*

10/519,208

=> file marpat

Expanded G-group definition display now available.

=> s l1 full  
L5 1 SEA SSS FUL L1

=> d ibib abs fqhit

10/519, 208

LS ANSWER 1 OF 1 MARPAT COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 140:59525 MARPAT  
TITLE: Preparation of  
3-(4-Oxo-4H-chromen-2-yl)-1(H)-quinolin-  
4-one as anticancer agents  
INVENTOR(S): Brion, Jean Daniel; Israel, Lucien; Le Rident, Alain;  
Harpey, Catherine; Rabhi, Cherif; El Kaloun, Bachir  
PATENT ASSIGNEE(S): Les Laboratoires Servier, Fr.; Servier Lab  
SOURCE: Fr. Demande, 36 pp.  
CODEN: FRXXBL  
DOCUMENT TYPE: Patent  
LANGUAGE: French  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2841243	A1	20031226	FR 2002-7536	20020619
FR 2841243	B1	20040820		
CA 2489136	A1	20031231	CA 2003-2489136	20030618
WO 2004000834	A1	20031231	WO 2003-FR1849	20030618
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KB, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MM, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: GH, GM, KE, LS, MM, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BP, BJ, CP, CO, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003269003	A1	20040106	AU 2003-269003	20030618
EP 1513833	A1	20050316	EP 2003-750780	20030618
EP 1513833	B1	20060419		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
BR 2003011956	A	20050329	BR 2003-11956	20030618
CN 1692110	A	20051102	CN 2003-814050	20030618
JP 2005533077	T	20051104	JP 2004-514935	20030618
AT 32698		20060515	AT 2003-750780	20030618
PT 1513833	T	20060731	PT 2003-750780	20030618
ES 2263013	TJ	20061201	ES 2003-3750780	20030618
NO 2004005540	A	20041217	NO 2004-5540	20041217
US 2006063801	A1	20060323	US 2004-519208	20041217
			PR 2002-7536	20020619
			WO 2003-FR1849	20030618

PRIORITY APPLN. INFO.:

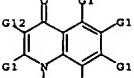
GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*  
AB Title compds. I (wherein R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>6</sub>, R<sub>8</sub>, R<sub>9</sub>, R<sub>10</sub> = H, OH, alkyl, aryl/alkoxycarbonyl/alkoxy, arylalkoxy, and alkoxycarbonylalkoxy; R<sub>5</sub> = alkyl, (un)substituted hetero/aryl; R<sub>7</sub> = H, OH, alkoxy, cyclo/alkyl, or R<sub>7</sub>

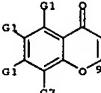
LS ANSWER 1 OF 1 MARPAT COPYRIGHT 2007 ACS on STN (Continued)  
- (un)substituted nitrogen or oxygen heterocycle, their optical isomers, pharmaceutical acceptable salts with acids, hydrates and solvates) were prepd. as anticancer agents. For example, II was prep. by esterification of 2,4-dimethoxy-6-hydroxyacetophenone (prep. given) with

2-acetyl-5-methoxyphenyl-4-oxo-1-phenyl-1,4-dihydroquinoline-3-carboxylate (prep. given), rearrangement in the presence of BuOK/DMP/THF, cyclization in the presence of AcOH/H<sub>2</sub>SO<sub>4</sub>, and deprotection. In an in vitro cytotoxicity test, II showed an IC<sub>50</sub> ranging from 0.25 μM to 0.05 μM towards five tumor cell lines. I exhibited a synergistic effect with several well-known anticancer agents (no data). Selected I induced apoptosis in 8 h.

MSTR 1



G1 = alkyl <containing 1-6 C  
G5 = carbocycle <containing 6-10 C, aromatic,  
6 or more normalized bonds, mono- or bicyclic,  
(1-2) 6-membered rings only; (opt. substd. by 1 or more G3)  
G7 = alkyl <containing 1-6 C  
G12 = 9



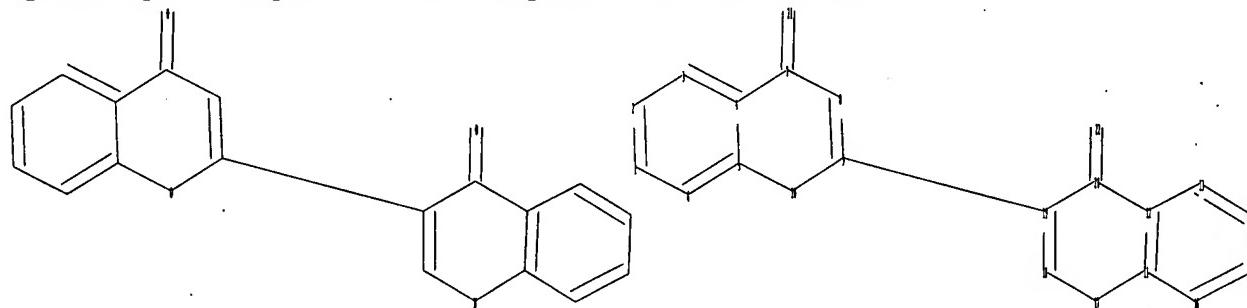
Patent location: claim 1  
Note: and pharmaceutically acceptable acid addition salts, hydrates, and solvates  
Note: also incorporates claim 10, formulas IV, V, VII, and VIII  
Note: additional ring formation also claimed  
Stereochemistry: optical isomers  
REFERENCE COUNT: 2  
FORMAT: THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE

LS ANSWER 1 OF 1 MARPAT COPYRIGHT 2007 ACS on STN (Continued)

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=> file reg

=>  
Uploading C:\Program Files\Stnexp\Queries\11519208.str



chain nodes :

21 22

ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

chain bonds :

7-21 9-19 20-22

ring bonds :

1-2 1-6 2-3 3-4 4-5 4-7 5-6 5-10 7-8 8-9 9-10 11-12 11-16 11-17 12-13  
12-20 13-14 14-15 15-16 17-18 18-19 19-20

exact/norm bonds :

7-21 11-17 12-20 17-18 18-19 19-20 20-22

exact bonds :

4-7 5-10 7-8 8-9 9-10 9-19

normalized bonds :

1-2 1-6 2-3 3-4 4-5 5-6 11-12 11-16 12-13 13-14 14-15 15-16

isolated ring systems :

containing 1 : 11 :

G1:C,H,O

G2:H,Cb,Cy,Hy

G3:C,H,O,Cb,Cy,Hy

Match level :

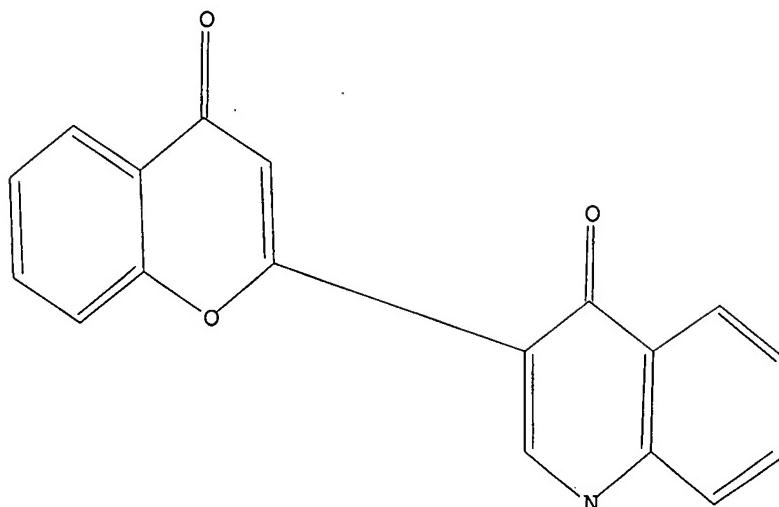
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11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom  
20:Atom 21:CLASS 22:CLASS

L6 STRUCTURE UPLOADED

=> d 16

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L6 HAS NO ANSWERS  
L6 STR



G1 C, H, O

G2 H, Cb, Cy, Hy

G3 C, H, O, Cb, Cy, Hy

Structure attributes must be viewed using STN Express query preparation.

```
=> s 16 full
L8      22 SEA SSS FUL L6

=> file ca

=> s 18
L9      1 L8

=> d his

(FILE 'HOME' ENTERED AT 11:07:07 ON 11 JUN 2007)

FILE 'REGISTRY' ENTERED AT 11:07:14 ON 11 JUN 2007
L1      STRUCTURE uploaded
L2      1 S L1 SAM
L3      21 S L1 FULL

FILE 'CA' ENTERED AT 11:07:41 ON 11 JUN 2007
L4      1 S L3

FILE 'MARPAT' ENTERED AT 11:07:49 ON 11 JUN 2007
L5      1 S L1 FULL

FILE 'REGISTRY' ENTERED AT 11:08:05 ON 11 JUN 2007
L6      STRUCTURE uploaded
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10/519, 208

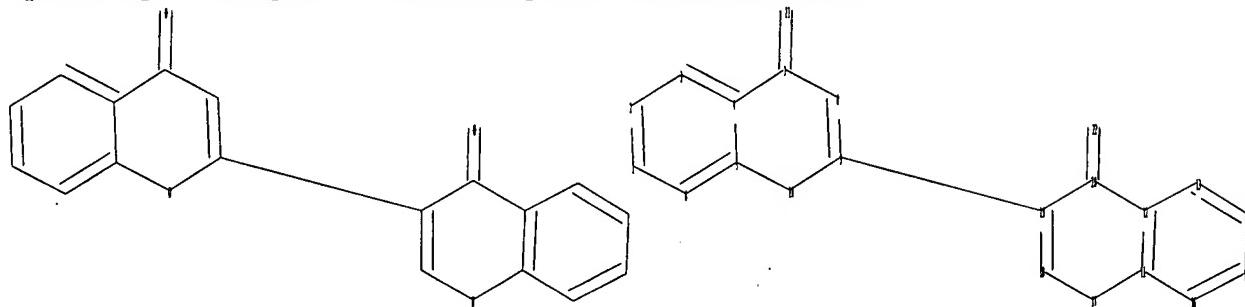
L7 1 S L6 SAM  
L8 22 S L6 FULL

FILE 'CA' ENTERED AT 11:09:02 ON 11 JUN 2007  
L9 1 S L8

=> s 19 not 14  
L10 0 L9 NOT L4

=> file reg

=>  
Uploading C:\Program Files\Stnexp\Queries\12519208.str



chain nodes :

21 22

ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

chain bonds :

7-21 9-19 20-22

ring bonds :

1-2 1-6 2-3 3-4 4-5 4-7 5-6 5-10 7-8 8-9 9-10 11-12 11-16 11-17 12-13  
12-20 13-14 14-15 15-16 17-18 18-19 19-20

exact/norm bonds :

4-7 5-10 7-8 7-21 8-9 9-10 11-17 12-20 17-18 18-19 19-20 20-22

exact bonds :

9-19

normalized bonds :

1-2 1-6 2-3 3-4 4-5 5-6 11-12 11-16 12-13 13-14 14-15 15-16

G1:C,H,O

G2:H,Cb,Cy,Hy

G3:C,H,O,Cb,Cy,Hy

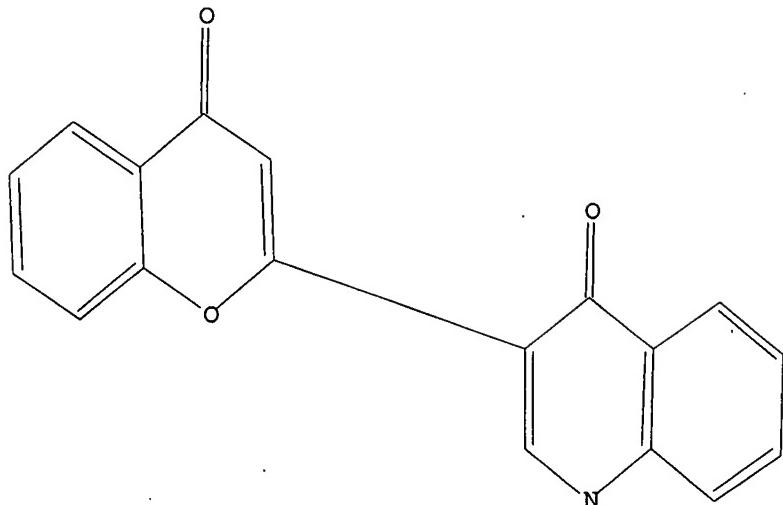
Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom  
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom  
20:Atom 21:CLASS 22:CLASS

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L11 STRUCTURE UPLOADED

=> d l11  
L11 HAS NO ANSWERS  
L11 STR



G1 C, H, O  
G2 H, Cb, Cy, Hy  
G3 C, H, O, Cb, Cy, Hy

Structure attributes must be viewed using STN Express query preparation.

=> s l11 full  
L12 22 SEA SSS FUL L11  
=> d his  
(FILE 'HOME' ENTERED AT 11:07:07 ON 11 JUN 2007)  
FILE 'REGISTRY' ENTERED AT 11:07:14 ON 11 JUN 2007  
L1 STRUCTURE UPLOADED  
L2 1 S L1 SAM  
L3 21 S L1 FULL  
FILE 'CA' ENTERED AT 11:07:41 ON 11 JUN 2007  
L4 1 S L3  
FILE 'MARPAT' ENTERED AT 11:07:49 ON 11 JUN 2007  
L5 1 S L1 FULL

10/519, 208

FILE 'REGISTRY' ENTERED AT 11:08:05 ON 11 JUN 2007  
L6 STRUCTURE uploaded  
L7 1 S L6 SAM  
L8 22 S L6 FULL

FILE 'CA' ENTERED AT 11:09:02 ON 11 JUN 2007  
L9 1 S L8  
L10 0 S L9 NOT L4

FILE 'REGISTRY' ENTERED AT 11:09:14 ON 11 JUN 2007  
L11 STRUCTURE uploaded  
L12 22 S L11 FULL

=> s l12 not l3  
L13 1 L12 NOT L3

=> s l13 full  
L14 1 L12 NOT L3

=> file ca

=> s l13  
L15 1 L13

=> s l15 not l9  
L16 0 L15 NOT L9

=> file marpat

=> d his

(FILE 'HOME' ENTERED AT 11:07:07 ON 11 JUN 2007)

FILE 'REGISTRY' ENTERED AT 11:07:14 ON 11 JUN 2007  
L1 STRUCTURE uploaded  
L2 1 S L1 SAM  
L3 21 S L1 FULL

FILE 'CA' ENTERED AT 11:07:41 ON 11 JUN 2007  
L4 1 S L3

FILE 'MARPAT' ENTERED AT 11:07:49 ON 11 JUN 2007  
L5 1 S L1 FULL

FILE 'REGISTRY' ENTERED AT 11:08:05 ON 11 JUN 2007  
L6 STRUCTURE uploaded  
L7 1 S L6 SAM  
L8 22 S L6 FULL

FILE 'CA' ENTERED AT 11:09:02 ON 11 JUN 2007  
L9 1 S L8  
L10 0 S L9 NOT L4

FILE 'REGISTRY' ENTERED AT 11:09:14 ON 11 JUN 2007  
L11 STRUCTURE uploaded  
L12 22 S L11 FULL  
L13 1 S L12 NOT L3

10/519,208

L14 1 S L13 FULL

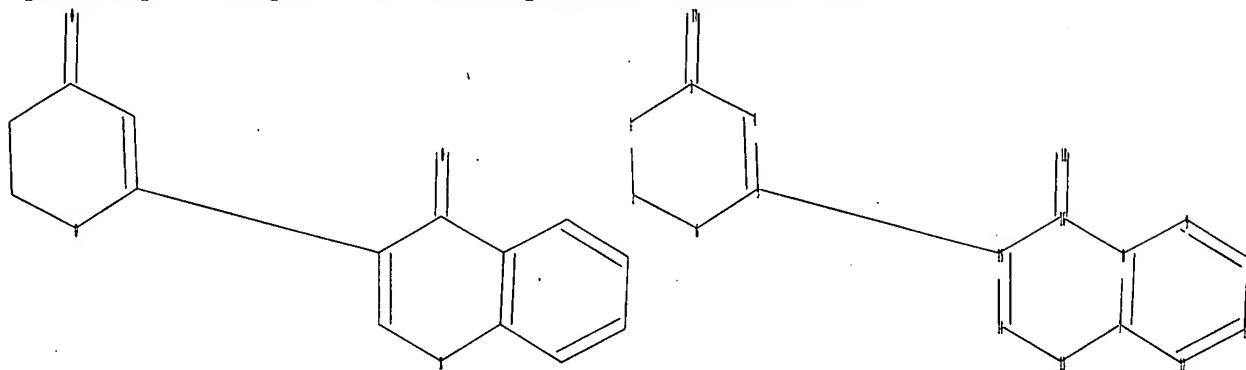
FILE 'CA' ENTERED AT 11:10:24 ON 11 JUN 2007  
L15 1 S L13  
L16 0 S L15 NOT L9

FILE 'MARPAT' ENTERED AT 11:10:43 ON 11 JUN 2007

=> s l11 full  
L17 1 SEA SSS FUL L11

=> file reg

=>  
Uploading C:\Program Files\Stnexp\Queries\13519208.str



chain nodes :

17 18

ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

chain bonds :

3-17 5-15 16-18

ring bonds :

1-3 1-2 2-6 3-4 4-5 5-6 7-8 7-12 7-13 8-9 8-16 9-10 10-11 11-12 13-14  
14-15 15-16

exact/norm bonds :

1-3 1-2 2-6 3-4 3-17 4-5 5-6 7-13 8-16 13-14 14-15 15-16 16-18

exact bonds :

5-15

normalized bonds :

7-8 7-12 8-9 9-10 10-11 11-12

G1:C,H,O

G2:H,Cb,Cy,Hy

G3:C,H,O,Cb,Cy,Hy

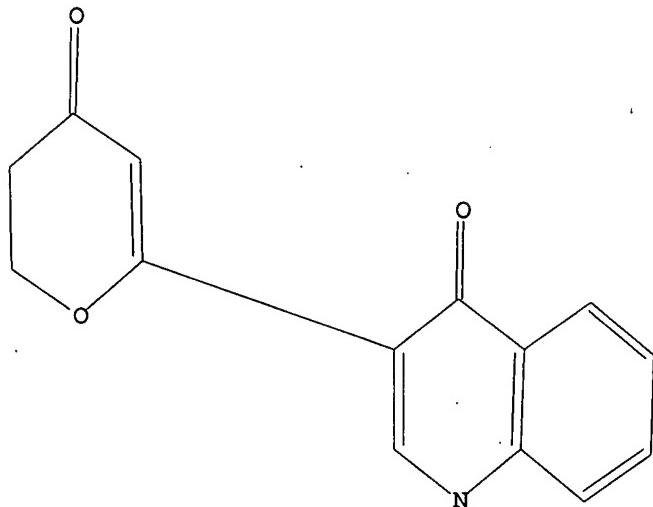
Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom  
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:CLASS 18:CLASS

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L18 STRUCTURE UPLOADED

=> d 118  
L18 HAS NO ANSWERS  
L18 STR



G1 C,H,O  
G2 H,Cb,Cy,Hy  
G3 C,H,O,Cb,Cy,Hy

Structure attributes must be viewed using STN Express query preparation.

=> s 118 full  
L19 22 SEA SSS FUL L18  
  
=> d his  
  
(FILE 'HOME' ENTERED AT 11:07:07 ON 11 JUN 2007)  
  
FILE 'REGISTRY' ENTERED AT 11:07:14 ON 11 JUN 2007  
L1 STRUCTURE UPLOADED  
L2 1 S L1 SAM  
L3 21 S L1 FULL  
  
FILE 'CA' ENTERED AT 11:07:41 ON 11 JUN 2007  
L4 1 S L3  
  
FILE 'MARPAT' ENTERED AT 11:07:49 ON 11 JUN 2007  
L5 1 S L1 FULL  
  
FILE 'REGISTRY' ENTERED AT 11:08:05 ON 11 JUN 2007

10/519, 208

L6                   STRUCTURE UPLOADED  
L7                 1 S L6 SAM  
L8                 22 S L6 FULL

FILE 'CA' ENTERED AT 11:09:02 ON 11 JUN 2007  
L9                 1 S L8  
L10                0 S L9 NOT L4

FILE 'REGISTRY' ENTERED AT 11:09:14 ON 11 JUN 2007  
L11                STRUCTURE UPLOADED  
L12                22 S L11 FULL  
L13                1 S L12 NOT L3  
L14                1 S L13 FULL

FILE 'CA' ENTERED AT 11:10:24 ON 11 JUN 2007  
L15                1 S L13  
L16                0 S L15 NOT L9

FILE 'MARPAT' ENTERED AT 11:10:43 ON 11 JUN 2007  
L17                1 S L11 FULL

FILE 'REGISTRY' ENTERED AT 11:11:07 ON 11 JUN 2007  
L18                STRUCTURE UPLOADED  
L19                22 S L18 FULL

=> s l19 not l12  
L20                0 L19 NOT L12

=>

---Logging off of STN---

=>  
Executing the logoff script...

=> LOG Y

STN INTERNATIONAL LOGOFF AT 11:12:25 ON 11 JUN 2007